REMARKS

Applicant appreciates the courtesy of Examiner Repko for conducting a telephone interview with Applicant's representative on January 10, 2007. During the interview, the Applicant's representative described the claimed invention, and distinguished the claimed invention over the Kelley, Higashiyama, and Matsumoto references. In particular, the Applicant's representative explained how the references do not teach or suggest converting graphic data on shadow polygons to visual-point coordinates and depth values. As mentioned during the interview, the Applicant's representative has now amended the claims to recite that the visual-point coordinates include "x-coordinates and y-coordinates."

Claims 1-11 are pending in the application. Independent claims 1, 4, and 9 have been amended to recite that graphic data is converted to visual-point coordinates "including x-coordinates and y-coordinates" and depth values. The amendments are fully supported by the application as originally filed (see, e.g., paragraphs 0078 to 0089 of the specification).

As amended, independent claims 1, 4, and 9 recite a graphic processing apparatus and method in which graphic data is converted to <u>visual-point coordinates including x-coordinates and y-coordinates</u> and depth values for normal polygons and shadow polygons. As such, at least the visual-point coordinates and depth values can be outputted in a state of being sorted between front-facing shadow polygons that face front and back-facing shadow polygons that face back.

Claims 4, 6, and 9-11 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent 5,517,603 to Kelley et al. ("Kelley"). Claims 1 and 3 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,897,865 to Higashiyama in view of U.S. Patent 5,043,922 to Matsumoto. Claims 2, 5, 7, and 8 also were rejected over the above references. These rejections are respectfully traversed.

Regarding the rejection of independent claims 4 and 9 over Kelley, the Kelley reference does not teach or suggest a graphic processing apparatus or method including <u>converting graphic</u>

data on **shadow polygons** to visual-point coordinates including x-coordinates and y-coordinates and depth values as claimed.

In the "Response to Arguments" section of the Office Action of 10/19/2006, it was alleged that Kelley discloses "converting graphic data of shadow polygons to visual point coordinates," in particular, that the Z set-up tokens of Kelley correspond to the claimed "shadow polygons" (see pages 2-3 of Office Action).

In Kelley, a Z setup token is described in columns 21-22, and column 24, lines 18-60, where the Z set-up token is used "for performing hidden surface removal and shadow calculations" (column 24, lines 45-47). Although each pixel has a location relative to an object, the pixels located in shadow volumes are not provided along an x-y plane, and are not converted into x and y coordinates *as claimed*.

In Kelley, only the graphic data of active objects is converted to coordinates, described in Kelley as "vertical interpolation" (see, e.g., column 14, lines 5-10 and 37-40; FIG. 7

However, there is no teaching or suggestion in Kelley of converting graphic data on **shadow polygons** to visual-point coordinates "including x-coordinates and y-coordinates" and depth values. For at least the foregoing reasons, Kelley does not anticipate or otherwise render obvious the Applicant's claimed invention as recited in independent claims 4 and 9.

Regarding the rejection of independent claim 1 over Higashiyama in view of Matsumoto, the Higashiyama reference does not teach or suggest a graphic processing apparatus including converting graphic data on **shadow polygons** to visual-point coordinates including x-coordinates and y-coordinates and depth values, or a "hidden surface removal and shadowing processing section for obtaining a coordinate region that is positioned behind the front-facing shadow polygons and in front of the back-facing shadow polygons" based on (1) visual-point coordinates, (2) depth values, and (3) the Z-buffer memory, as recited in claim 1.

On pages 3-4 of the Office Action of 10/19/2006, it was alleged that "pixel positions" of Higashiyama correspond to the claimed "visual point coordinates."

However, "pixel positions" such as the positions of shadow pixels in Higashiyama are <u>not</u> equivalent to "visual-point coordinates," which refer to x-coordinates and y-coordinates. Although each pixel has a position relative to an image, the pixels located in shadow volumes are <u>not</u> provided along an x-y plane, and are <u>not</u> converted into x and y coordinates *as claimed*.

Also, there is no teaching or suggestion that the shadow pixels disclosed in Higashiyama are used to obtain a "coordinate region" based on all of: (1) visual-point coordinates, (2) depth values, and (3) the Z-buffer memory. Higashiyama merely discloses that the <u>Z-values</u> are used to distinguish front-facing polygons from back-facing polygons (see column 6, lines 19-28).

Therefore, even if the Higashiyama and Matsumoto references were somehow combined, the proposed combination would not teach or suggest the Applicant's claimed invention as recited in independent claim 1.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

Date: January 19, 2007   By: _____

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